



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<b>(51) International Patent Classification <sup>6</sup> :</b>  <b>C12Q 1/68</b>	<b>A3</b>	<b>(11) International Publication Number:</b> <b>WO 99/37819</b>  <b>(43) International Publication Date:</b> 29 July 1999 (29.07.99)																		
<b>(21) International Application Number:</b> PCT/US99/01705  <b>(22) International Filing Date:</b> 27 January 1999 (27.01.99)  <b>(30) Priority Data:</b> <table border="0"> <tr> <td>09/014,304</td> <td>27 January 1998 (27.01.98)</td> <td>US</td> </tr> <tr> <td>60/073,011</td> <td>29 January 1998 (29.01.98)</td> <td>US</td> </tr> <tr> <td>60/078,102</td> <td>16 March 1998 (16.03.98)</td> <td>US</td> </tr> <tr> <td>60/084,425</td> <td>6 May 1998 (06.05.98)</td> <td>US</td> </tr> <tr> <td>60/084,509</td> <td>6 May 1998 (06.05.98)</td> <td>US</td> </tr> <tr> <td>09/135,183</td> <td>17 August 1998 (17.08.98)</td> <td>US</td> </tr> </table> <b>(71) Applicant (for all designated States except US):</b> CLINICAL MICRO SENSORS, INC. [US/US]; 101 Waverly Avenue, Pasadena, CA 91105 (US).  <b>(72) Inventor; and</b> <b>(75) Inventor/Applicant (for US only):</b> KAYYEM, Jon, Faiz [US/US]; 428 South Sierra Bonita Avenue, Pasadena, CA 91106 (US).  <b>(74) Agents:</b> SILVA, Robin, M. et al.; Flehr, Hohbach, Test, Albritton & Herbert LLP, Suite 3400, 4 Embarcadero Center, San Francisco, CA 94111-4187 (US).		09/014,304	27 January 1998 (27.01.98)	US	60/073,011	29 January 1998 (29.01.98)	US	60/078,102	16 March 1998 (16.03.98)	US	60/084,425	6 May 1998 (06.05.98)	US	60/084,509	6 May 1998 (06.05.98)	US	09/135,183	17 August 1998 (17.08.98)	US	<b>(81) Designated States:</b> AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).  <b>Published</b> <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i>  <b>(88) Date of publication of the international search report:</b> 14 October 1999 (14.10.99)
09/014,304	27 January 1998 (27.01.98)	US																		
60/073,011	29 January 1998 (29.01.98)	US																		
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09/135,183	17 August 1998 (17.08.98)	US																		
<b>(54) Title:</b> AMPLIFICATION OF NUCLEIC ACIDS WITH ELECTRONIC DETECTION  <b>(57) Abstract</b>  <p>The invention relates to compositions and methods useful in the detection of nucleic acids using a variety of amplification techniques, including both signal amplification and target amplification. Detection proceeds through the use of an electron transfer moiety (ETM) that is associated with the nucleic acid, either directly or indirectly, to allow electronic detection of the ETM using an electrode.</p>																				

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# INTERNATIONAL SEARCH REPORT

International Application No

PCT/US 99/01705

**A. CLASSIFICATION OF SUBJECT MATTER**  
IPC 6 C12Q1/68

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)  
IPC 6 C12Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 96 40712 A (CALIFORNIA INST OF TECHN) 19 December 1996 (1996-12-19) see whole doc. esp. claims and examples ---	1,13-16
A	UTO Y ET AL: "Electrochemical analysis of DNA amplified by the polymerase chain reaction with a ferrocenylated oligonucleotide" ANALYTICAL BIOCHEMISTRY, vol. 250, no. 250, 1997, pages 122-124 124, XP002106964 ISSN: 0003-2697 ---	
A	WO 97 09337 A (DEUTSCHES KREBSFORSCH ;SCHUETTE DAGMAR (DE); WIESSLER MANFRED (DE)) 13 March 1997 (1997-03-13) the whole document --- -/--	

☒ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

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Date of the actual completion of the international search

20 August 1999

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International Application No

PCT/US 99/01705

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P,X	WO 98 20162 A (GOZIN MICHAEL ;YU CHANGJUN (US); KAYYEM JON F (US); CLINICAL MICRO) 14 May 1998 (1998-05-14) cited in the application the whole document ---	13-20
P,X	WO 98 57159 A (CLINICAL MICRO SENSORS INC) 17 December 1998 (1998-12-17) see esp. claims -----	13-16

# INTERNATIONAL SEARCH REPORT

Information on patent family members

In International Application No

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